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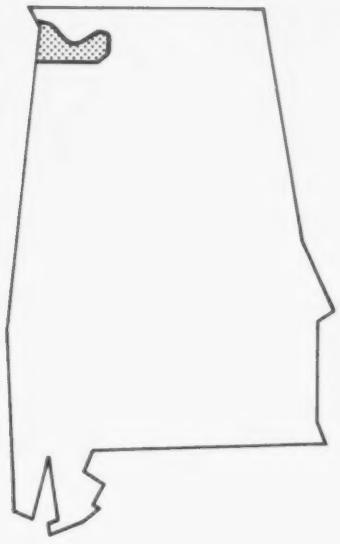
FLOOD INSURANCE STUDY

COLBERT COUNTY, ALABAMA
UNINCORPORATED AREAS



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DECEMBER 15, 1980

federal emergency management agency
federal insurance administration

COMMUNITY NUMBER - 010318

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TABLE OF CONTENTS

		Page
1.0	INTRODUCTION	1
1.1	Purpose of Study	1
1.2	Coordination	1
1.3	Authority and Acknowledgments	1
2.0	AREA STUDIED	1
2.1	Scope of Study	1
2.2	Community Description	3
2.3	Principal Flood Problems	4
2.4	Flood Protection Measures	5
3.0	ENGINEERING METHODS	5
3.1	Hydrologic Analyses	5
3.2	Hydraulic Analyses	6
4.0	FLOOD PLAIN MANAGEMENT APPLICATIONS	8
4.1	Flood Boundaries	8
4.2	Floodways	9
5.0	INSURANCE APPLICATION	10
5.1	Reach Determinations	13
5.2	Flood Hazard Factors	13
5.3	Flood Insurance Zones	13
5.4	Flood Insurance Rate Map Description	15
6.0	OTHER STUDIES	15
7.0	LOCATION OF DATA	17
8.0	BIBLIOGRAPHY AND REFERENCES	17

TABLE OF CONTENTS (Cont'd)

Page

FIGURES

Figure 1 - Vicinity Map..... 2
Figure 2 - Floodway Schematic..... 10

TABLES

Table 1 - Summary of Discharges..... 7
Table 2 - Floodway Data..... 11
Table 3 - Flood Insurance Zone Data..... 14

EXHIBITS

Exhibit 1 - Flood Profiles

Spring Creek	Panels 01P-02P
Dry Creek	Panels 03P-04P
Pond Creek	Panels 05P-06P

Exhibit 2 - Flood Boundary and Floodway Map Index
Flood Boundary and Floodway Map

PUBLISHED SEPARATELY:

Flood Insurance Rate Map Index
Flood Insurance Rate Map

1.0 INTRODUCTION

1.1 Purpose of Study

The purpose of this Flood Insurance Study is to investigate the existence and severity of flood hazards in Colbert County, Alabama, and to aid in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. Initial use of this information will be to convert Colbert County to the regular program of flood insurance by the Federal Insurance Administration. Further use of the information will be made by local and regional planners in their efforts to promote sound land use and flood plain development.

1.2 Coordination

Streams requiring detailed or approximate study were identified at a meeting attended by representatives of the Tennessee Valley Authority, the Federal Insurance Administration, the Northwestern Alabama Region Council of Governments, and Colbert County on January 10, 1977.

The results of this study were reviewed at a final community coordination meeting held on August 6, 1980. Attending the meeting were representatives of the Federal Insurance Administration, the study contractor, the Northwestern Alabama Region Council of Governments, and the county. This study incorporates all appropriate comments, and all problems have been resolved.

1.3 Authority and Acknowledgments

The source of authority for this Flood Insurance Study is the National Flood Insurance Act of 1968, as amended.

The hydrologic and hydraulic analyses for this study were performed by the Tennessee Valley Authority, for the Federal Insurance Administration, under Inter-Agency Agreement No. IAA-H-15-78, Project Order No. 1. This work, which was completed in June 1979, covered all significant flooding sources affecting Colbert County.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the unincorporated areas of Colbert County, Alabama. The area of study is shown on the Vicinity Map (Figure 1).

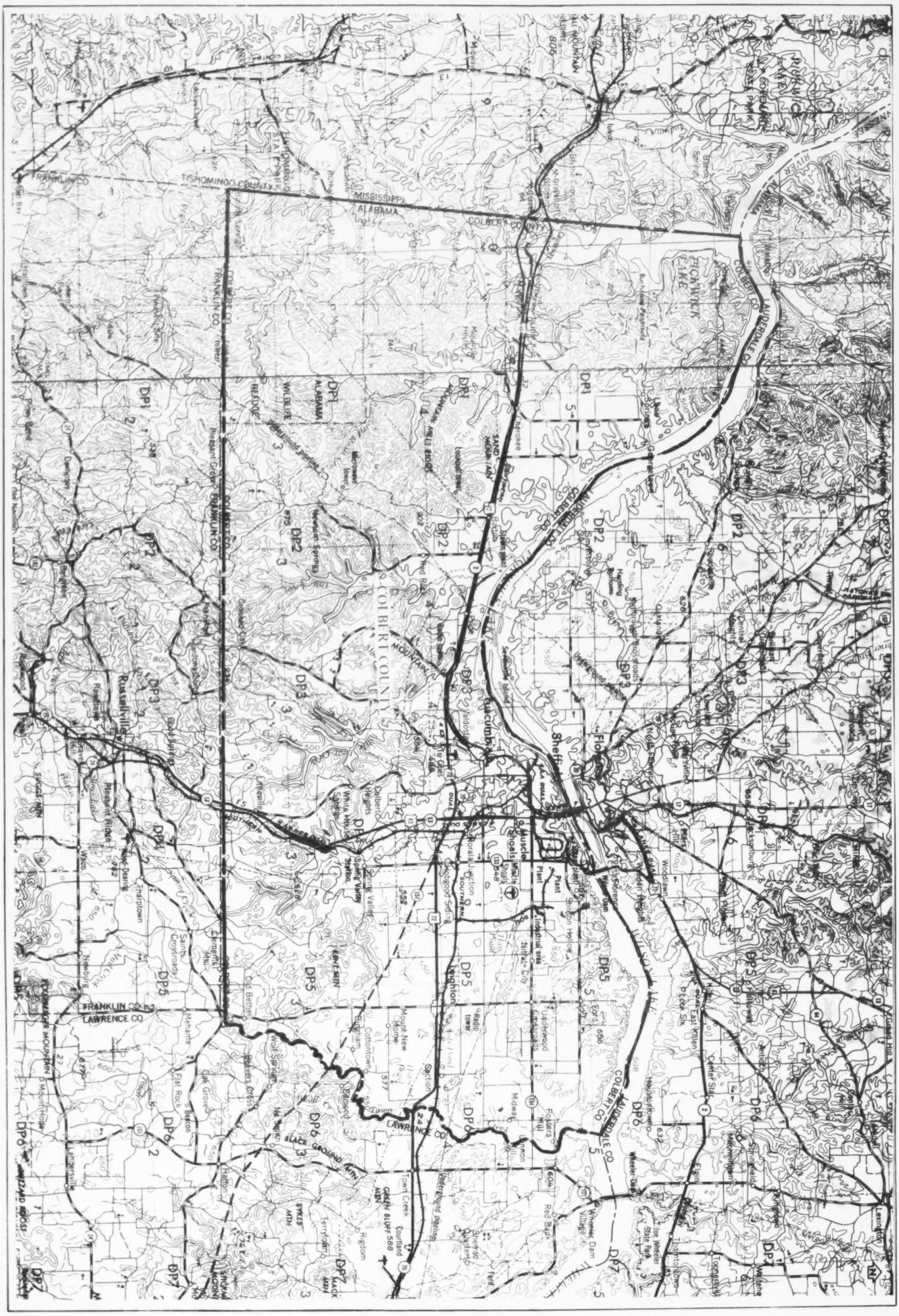

FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

COLBERT COUNTY, AL
(UNINCORPORATED AREAS)

APPROXIMATE SCALE
4 0 4 8 12 MILES

VICINITY MAP

Areas not included in the study are:

City of Tuscumbia	City of Cherokee
City of Sheffield	City of Leighton
City of Muscle Shoals	Town of Littleville

The streams selected for detailed study were those flowing through existing developed areas and those in areas of potential growth. Streams selected for detailed study were Spring Creek between stream miles 4.60 and 8.14, Dry Creek between stream miles 0.00 and 2.22, and Pond Creek between stream miles 3.73 and 6.56.

Those streams flowing through undeveloped areas or areas that will not be developed by January 1984 were studied by approximate methods.

Those areas studied by detailed methods were chosen with consideration given to all proposed construction and forecasted development through 1984.

2.2 Community Description

Colbert County is in northwestern Alabama and is bordered by Lawrence County to the east, Lauderdale County to the north, Tishomingo County in Mississippi to the west, and Franklin County to the south. The county encompasses an area of 596 square miles. It had a population of 49,632 in 1970, which was an increase of 7 percent over the 1960 population of 46,506 (Reference 1).

The county is named for George Colbert, Chief of the Chickasaws, whose home was at Georgetown Landing, 6 miles north of Cherokee (Reference 1). The first settlers to arrive in Colbert County in 1817 were from Virginia and the Carolinas. The county was established in 1867, having previously been part of Franklin County. Colbert County was created by an act of the Alabama Legislature in 1895 (Reference 2).

Most residential and commercial development in Colbert County is located in and around the tricity area of Tuscumbia, Sheffield, and Muscle Shoals. Commercial development outside the tricity area is located on main east-west U.S. Highway 72 and north-south U.S. Highway 43. These establishments are outside the flood-prone areas of Spring and Pond Creeks. Industrial development is located along Tennessee River and close to the major highways and rail lines.

Flood plain development along Dry Creek includes a commercial development at the intersection of U.S. Highway 72 and State Highway 157, and a developing residential area downstream of that intersection.

All streams in Colbert County eventually drain into Tennessee River.

Spring Creek headwaters are in Franklin County near Russellville, approximately 10 miles south of Tuscumbia. Spring Creek flows northerly through undeveloped land before entering Tuscumbia. The topography of the watershed is generally rolling with some steep valley slopes in the upper reaches. Approximately two-thirds of the watershed is forested (Reference 2).

Dry Creek headwaters are southeast of Muscle Shoals. The creek flows through relatively flat land then past commercial and residential developments before emptying into Spring Creek (Reference 3).

Pond Creek begins east of Muscle Shoals and flows mainly through undeveloped, relatively flat land before passing the industries at Listerhill and Muscle Shoals. Pond Creek has an average fall of 2 feet per mile. The Pond Creek drainage area at its mouth is 22 square miles (Reference 4).

Temperatures in the area range from a high of 106°F to a low of -6°F. The average maximum and minimum temperatures are 71.8°F and 51.2°F, respectively. The average annual precipitation is 51.45 inches.

Dewey and Decatur series soils derived from weathered limestone dominate the agricultural areas over most of the county. Along streams, the soils consist of recent deposits of fine-grained alluvium washed from the mountains.

Vegetation in the detailed study area consists of agricultural crops, primarily soybeans and cotton.

2.3 Principal Flood Problems

The primary cause of flooding in Colbert County is heavy rain associated with tropical storms and hurricanes from the Gulf of Mexico.

The principal flooding sources are Spring Creek, Dry Creek, and Pond Creek.

The worst flood to occur on Spring Creek since 1874 was the March 14 through 17, 1973, flood. The flood crested at an elevation of 438.2 feet at stream mile 5.32 and had an approximate recurrence interval of 150 years. The flood caused agricultural damage and the temporary closing of U.S. Highway 43.

The March 14 through 17, 1973, flood was the worst flood to occur on Dry Creek. The flood crested at an elevation of 494.1 feet at stream mile 1.69 and had a recurrence interval of 300 years. A church basement was flooded, and U.S. Highway 72 was temporarily closed for a day by 1 to 2 feet of water.

During the March 14 through 17, 1973 flood, the maximum discharge of 590 cubic feet per second was recorded on Pond Creek at the stream gage at stream mile 4.8 and had a recurrence interval of 15 years.

2.4 Flood Protection Measures

The Tennessee Valley Authority system of reservoirs has substantially reduced main-stream flooding. Other than this, the county has no flood control structures or program of flood plain management in effect.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the county, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equalled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for flood plain management and for flood insurance premium rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equalled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1 percent chance of annual occurrence) in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported here reflect flooding potentials based on conditions existing in the county at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for floods of the selected recurrence intervals for each stream studied in detail in the county.

No formal stream-gaging stations have been maintained on Spring Creek and Dry Creek. Discharge frequency was estimated using relationships between peak discharge and drainage area developed from analyses of records at the gaging stations located on nearby streams with similar hydrologic characteristics. These gages are maintained by the U.S. Geological Survey, and the Tennessee Valley Authority. Record lengths for these gages ranged from 3 to 24 years (References 5, 6, and 7).

Frequency curves for these streams were computed using the procedure outlined in Bulletin 17-A (Reference 8), with adjustments for historic flood information where available.

Limited flood information was available on Spring Creek within the study limits. Floodmarks for the March 1929, March 1955, December 1969, and March 1973 floods were available from unpublished records of the Tennessee Valley Authority and were considered in the analysis.

The adopted flow estimates were compared with results obtained using applicable U.S. Geological Survey relationships. On Dry Creek, with a drainage area of approximately 15 square miles, the Tennessee Valley Authority estimates were 15 percent greater at the 100-year flood level than the 1977 U.S. Geological Survey relationships (Reference 9). The difference results from limiting the analysis to records for similar watersheds in the region including those in Tennessee. The U.S. Geological Survey equations are based upon gage records for the entire State of Alabama, thus regional differences are masked.

A Tennessee Valley Authority gaging station on Pond Creek at stream mile 4.8, operated for the period 1950 through 1974, was the principal source of data for defining discharge-frequency relationships for Pond Creek. The flow estimates were made using drainage-area relationships drawn through the Pond Creek flow-frequency values with the slope equivalent to the regional relationship.

Records from a second Tennessee Valley Authority gaging station on Pond Creek at stream mile 0.20, operated from 1950 through 1973, were not considered because of alterations to hydraulic characteristics of the stream below Muscle Shoals.

Peak discharge-drainage area relationships for Spring Creek, Dry Creek, and Pond Creek are shown in Table 1.

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of streams in the county were carried out to provide estimates of the elevations of floods of the selected recurrence intervals along each stream studied in the county.

Water-surface elevations for floods of the selected recurrence intervals were computed using the U.S. Army Corps of Engineers HEC-2 step-backwater computer program (Reference 10). Cross sections at bridges and culverts were field surveyed for structural geometry and elevation data. Valley cross sections were obtained by photogrammetric means at strategic locations and at sufficiently close intervals to enable water-surface elevations to be computed accurately.

Table 1. Summary of Discharges

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet per Second) 10-Year	50-Year	100-Year	500-Year
Spring Creek					
At Stream Mile 4.90	80.9	11,000	16,900	19,800	26,300
At Stream Mile 6.00	79.1	10,800	16,500	19,200	25,800
At Stream Mile 7.83	76.4	10,500	16,200	19,000	25,100
At Stream Mile 8.12	58.9	8,600	13,200	15,500	20,500
Dry Creek					
At Mouth	15.2	3,100	4,800	5,600	7,500
At Stream Mile 1.70	12.9	2,250	4,250	4,800	6,400
Pond Creek					
At Stream Mile 1.42	18.3	700	1,050	1,200	1,600
At Stream Mile 4.75	13.7	550	820	950	1,300
At Stream Mile 6.10	11.2	470	700	800	1,100

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway is computed (Section 4.2), selected cross section locations are also shown on the Flood Boundary and Floodway Map (Exhibit 2).

Roughness factors (Manning's "n") for these computations were determined on the basis of field inspection of channel and flood plain areas, on previous studies by the Tennessee Valley Authority, and computed coefficients based on known flood profiles. The range in values for Manning's "n" is tabulated below:

Stream	Channel	Overbank
Spring Creek	0.040-0.045	0.060-0.150
Dry Creek	0.035-0.070	0.030-0.150
Pond Creek	0.045-0.060	0.080-0.140

Starting water-surface elevations for Spring Creek were developed from known data for Pickwick Reservoir. Starting water-surface elevations for Pond Creek were obtained from the detailed study of Pond Creek in the Muscle Shoals Flood Insurance Study (Reference 3). Starting water-surface elevations for Dry Creek were obtained by slope-area calculations.

Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals (Exhibit 1).

The flood elevations as shown on the profiles are considered valid only if hydraulic structures in general remain unobstructed, operate properly, and do not fail.

All elevations are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). Elevation reference marks used in the study are shown on the maps.

4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

A prime purpose of the National Flood Insurance Program is to encourage State and local governments to adopt sound flood plain management programs. Each Flood Insurance Study, therefore, includes a flood boundary map designed to assist communities in developing sound flood plain management measures.

4.1 Flood Boundaries

In order to provide a national standard without regional discrimination, the 100-year flood has been adopted by the Federal Insurance Administration as the base flood for purposes of flood plain

management measures. The 500-year flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the boundaries of the 100- and 500-year floods have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were developed photogrammetrically, using aerial photographs at a scale of 1:9600 (Reference 11).

The flooded area was plotted at a scale of 1:6000 and traced on enlarged 7.5-minute series topograpic maps of the same scale, with a contour interval of 10 feet (Reference 12).

Flood boundaries for the 100- and 500-year floods are shown on the Flood Boundary and Floodway Map (Exhibit 2). In cases where the 100- and 500-year flood boundaries are close together, only the 100-year flood boundary has been shown. Small areas within the flood boundaries may lie above the flood elevations and, therefore, not be subject to flooding; owing to limitations of the map scale, such areas are not shown.

Approximate flood boundaries were taken from the Federal Insurance Administration's Flood Hazard Boundary Map (Reference 13). In accordance with Federal Insurance Administration guidelines, approximate flood plain boundaries less than 200 feet wide were determined to be areas of minimal flooding, and have been deleted.

4.2 Floodways

Encroachment on flood plains, such as artificial fill, reduces the flood-carrying capacity and increases flood heights, thus increasing flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, the concept of a floodway is used as a tool to assist local communities in this aspect of flood plain management. Under this concept, the area of the 100-year flood is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent flood plain areas, that must be kept free of encroachment in order that the 100-year flood be carried without substantial increases in flood heights. As minimum standards, the Federal Insurance Administration limits such increases in flood heights to 1.0 foot, provided that hazardous velocities are not produced.

The floodways proposed for this study were computed by setting encroachments in the stream overbanks and then testing these with the backwater program. The results were adjusted and retested until an allowable increase in flood elevation was reached.

The results of these computations are tabulated at selected cross sections for each stream segment for which a floodway is computed (Table 2).

As shown on the Flood Boundary and Floodway Map (Exhibit 2), the floodway boundaries were determined at cross sections; between cross sections, the boundaries were interpolated. In cases where the floodway and 100-year flood boundaries are close together, only the floodway boundary has been shown.

The area between the floodway and the boundary of the 100-year flood is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 2.

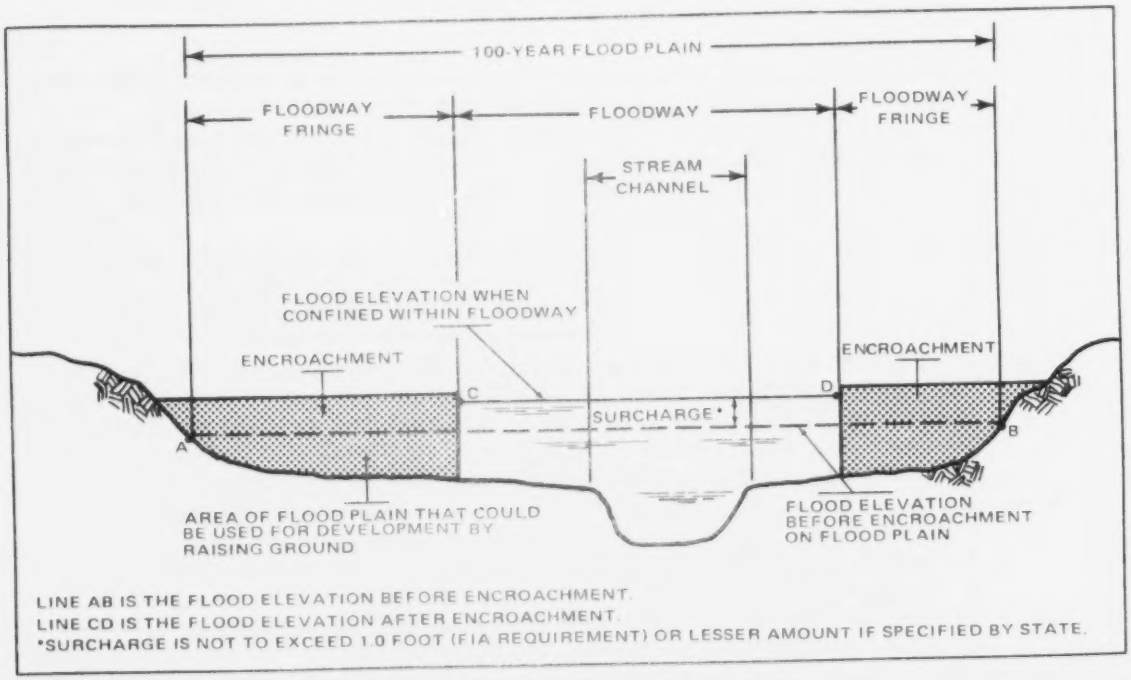
100-YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE*
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN
LINE AB IS THE FLOOD ELEVATION BEFORE ENCROACHMENT.
LINE CD IS THE FLOOD ELEVATION AFTER ENCROACHMENT.
*SURCHARGE IS NOT TO EXCEED 1.0 FOOT (FIA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE.

Figure 2. Floodway Schematic

5.0 INSURANCE APPLICATION

In order to establish actuarial insurance rates, the Federal Insurance Administration has developed a process to transform the data from the engineering study into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors, and flood insurance zone designations for each flooding source studied in detail affecting Colbert County.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Spring Creek								
A	4.88	1,020/ 580[2]	7,760	2.6	436.4	436.4	437.2	0.8
B	5.48	900	7,230	2.7	438.8	438.8	439.3	0.5
C	5.95	1,170	9,520	2.0	441.2	441.2	441.9	0.7
D	6.93	950	6,340	3.0	446.1	446.1	447.1	1.0
E	7.28	815	5,248	3.6	448.0	448.0	448.8	0.8
F	7.86	1,370	14,140	1.3	455.9	455.9	456.1	0.2
Dry Creek								
A	0.25	130	891	6.2	467.3	467.3	468.2	0.9
B	0.51	300	5,047	1.1	486.2	486.2	486.7	0.5
C	0.60	300	4,543	1.2	486.2	486.2	486.7	0.5
D	0.88	340	3,418	1.6	486.4	486.4	486.9	0.5
E	1.00	400	2,833	1.9	486.7	486.7	487.3	0.6
F	1.18	460	3,612	1.5	486.9	486.9	487.6	0.7
G	1.50	440	2,561	2.0	487.4	487.4	488.3	0.9
H	1.61	360	3,259	1.6	493.8	493.8	494.5	0.7
I	1.69	360	2,926	1.6	493.9	493.9	494.5	0.6
J	1.91	760	6,505	0.7	494.0	494.0	494.7	0.7
K	2.17	550	2,768	1.7	494.0	494.0	494.8	0.8
L	2.22	550	2,628	1.8	497.9	497.9	498.3	0.4

[1]Miles Above Mouth [2]Width/Width Within County Limits

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

COLBERT COUNTY, AL
(UNINCORPORATED AREAS)

FLOODWAY DATA

SPRING CREEK-DRY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Pond Creek								
A	4.00	500	1,347	0.7	517.5	517.5	518.5	1.0
B	4.30	180	867	1.1	518.3	518.3	519.1	0.8
C	4.50	250	1,107	0.9	519.0	519.0	519.9	0.9
D	4.75	120	398	2.4	521.0	521.0	521.5	0.5
E	5.16	250	1,451	0.6	521.6	521.6	522.3	0.7
F	5.46	600	3,107	0.3	521.7	521.7	522.4	0.7
G	5.78	230	1,829	0.4	521.8	521.8	522.5	0.7
H	6.16	110	1,643	0.5	533.8	533.8	534.5	0.7
I	6.36	130	2,041	0.4	533.8	533.8	534.5	0.7
J	6.56	170	2,359	0.3	533.9	533.9	534.5	0.6

[1]Miles Above Mouth

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

COLBERT COUNTY, AL
(UNINCORPORATED AREAS)

FLOODWAY DATA

POND CREEK

5.1 Reach Determinations

Reaches are defined as lengths of watercourses having relatively the same flood hazard, based on the average weighted difference in water-surface elevations between the 10- and 100-year floods. This difference does not have a variation greater than that indicated in the following table for more than 20 percent of the reach:

Average Difference Between 10- and 100-Year Floods	Variation
Less than 2 feet	0.5 foot
2 to 7 feet	1.0 foot
7.1 to 12 feet	2.0 feet
More than 12 feet	3.0 feet

The locations of the reaches determined for the flooding sources of Colbert County are shown on the Flood Profiles (Exhibit 1) and summarized in Table 3.

5.2 Flood Hazard Factors

The Flood Hazard Factor (FHF) is the Federal Insurance Administration device used to correlate flood information with insurance rate tables. Correlations between property damage from floods and their FHF are used to set actuarial insurance premium rate tables based on FHFs from 005 to 200.

The FHF for a reach is the average weighted difference between the 10- and 100-year flood water-surface elevations expressed to the nearest one-half foot, and shown as a three-digit code. For example, if the difference between water-surface elevations of the 10- and 100-year floods is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference between the 10- and 100-year water-surface elevations is greater than 10.0 feet, accuracy for the FHF is to the nearest foot.

5.3 Flood Insurance Zones

After the determination of reaches and their respective Flood Hazard Factors, the entire unincorporated area of Colbert County was divided into zones, each having a specific flood potential or hazard. Each zone was assigned one of the following flood insurance zone designations:

Zone A: Special Flood Hazard Areas inundated by the 100-year flood, determined by approximate methods; no base flood elevations shown or Flood Hazard Factors determined.

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION (FEET NGVD)[3]
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
Spring Creek							
Reach 1	0254,0258	-2.7	-0.9	2.0	025	A5	Varies - See Map
Dry Creek							
Reach 1	0258	-2.7	-0.7	1.6	025	A5	Varies - See Map
Reach 2	0258,0259	-0.8	-0.3	0.6	010	A2	Varies - See Map
Pond Creek							
Reach 1	0113	-1.9	-1.1	0.7	020	A4	Varies - See Map
Reach 2	0113,0114 0277,0300	-1.1	-0.4	0.7	010	A2	Varies - See Map
Reach 3	0277	-0.5	-0.1	0.3	005	A1	534

[1]Flood Insurance Rate Map Panel [2]Weighted Average [3]Rounded to Nearest Foot

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

COLBERT COUNTY, AL
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

SPRING CREEK-DRY CREEK-POND CREEK

Zones A1, A2, A4, and A5: Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations shown, and zones subdivided according to Flood Hazard Factors.

Zone B: Areas between the Special Flood Hazard Areas and the limits of the 500-year flood, including areas of the 500-year flood plain that are protected from the 100-year flood by dike, levee, or other water control structure; also areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; and areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided.

Zone C: Areas of minimal flooding.

The flood elevation differences, Flood Hazard Factors, flood insurance zones, and base flood elevations for each flooding source studied in detail in the county are summarized in Table 3.

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for Colbert County is, for insurance purposes, the principal result of the Flood Insurance Study. This map (published separately) contains the official delineation of flood insurance zones and base flood elevation lines. Base flood elevation lines show the locations of the expected whole-foot water-surface elevations of the base (100-year) flood. This map is developed in accordance with the latest flood insurance map preparation guidelines published by the Federal Insurance Administration.

6.0 OTHER STUDIES

In 1957, at the request of the Tuscumbia City Planning Commission and the Alabama State Planning and Industrial Development Board, the Tennessee Valley Authority completed a study of floods on Spring Creek (Reference 2). The report provided a basis for continuing study and planning on the part of Tuscumbia in arriving at solutions to reduce flood damage. The 100- and 500-year floods were not provided.

In 1971, the U.S. Soil Conservation Service considered a system of small flood-storage dams located on the tributaries of Spring Creek south of Tuscumbia. The primary purpose of this system was to retard tributary flooding in Colbert County and Tuscumbia. Congress has given the U.S.

Soil Conservation Service preliminary approval to study the project. Construction had not begun at the time of this study.

The data in this study are compatible with the data in the Flood Insurance Studies of the adjacent communities of Muscle Shoals, Sheffield, Florence, Cherokee, and Littleville (References 3, 14, 15, 16, and 17, respectively). In some cases, however, streams in adjacent communities were studied by detailed methods due to a high degree of current or expected development, and by approximate methods in the county due to lack of development.

There are differences between the Tuscumbia Flood Insurance Study (Reference 18) and the Colbert County Flood Insurance Study regarding zone determination and flood elevations on Spring Creek. Reach 3 (Zone A8) in the Tuscumbia, Alabama, study should end at stream mile 4.60, at the Tuscumbia corporate limits. A new reach assigned as Zone A5 should begin at stream mile 4.60, where a Spring Creek flooded area is shared by Tuscumbia and Colbert County. This new reach becomes Reach 4 (Zone A5, stream miles 4.60 to 6.40) in Tuscumbia and Reach 1 (Zone A5, stream miles 4.60 to 8.17) in Colbert County.

In April 1977, a 2-foot error was discovered in the field notes of computations setting the elevation of the floodmark of the March 1973 flood at the new U.S. Highway 43 bridge at stream mile 7.87 on Spring Creek. The error was discovered while determining the approximate frequency of the March 1973 flood for the U.S. Soil Conservation Service.

After correcting the elevation error, the floods and flow distribution of the March 1973 flood were revised. Roughness coefficients were computed based on new flow distribution and the corrected flood elevation.

The 10-, 50-, 100-, and 500-year flood profiles for Colbert County were recomputed and compared with the published profiles of the Sheffield and Tuscumbia, Alabama, Flood Insurance Studies.

Spring Creek profiles through Sheffield were not affected by the change, but in Tuscumbia the differences in the 100-year flood are as follows:

100-Year Flood Elevations (Feet)
Spring Creek

Stream Mile	Tuscumbia Flood Insurance Study	Colbert County Flood Insurance Study	Difference (Feet)
4.47	435.7	435.3	-0.4
4.88	437.1	436.4	-0.7
5.48	439.5	438.8	-0.7
5.95	441.8	441.2	-0.6

Flood boundary delineations for this study supersede the Federal Insurance Administration's Flood Hazard Boundary Map (Reference 13).

This study is authoritative for the purposes of the National Flood Insurance Program; data presented herein either supersede or are compatible with all previous determinations.

7.0 LOCATION OF DATA

Survey, hydrologic, hydraulic, and other pertinent data used in this study can be obtained by contacting the Insurance and Mitigation Division, Federal Emergency Management Agency, 1375 Peachtree Street, NE., Atlanta, Georgia 30309.

8.0 BIBLIOGRAPHY AND REFERENCES

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11. Tennessee Valley Authority, Mapping Service Branch, Aerial Photographs, Scale 1:9600: Vicinity of Spring Creek, Dry Creek, and Pond Creek, Colbert County, Alabama (March 1977)

12. U.S. Department of the Interior, Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 10 feet: Tuscumbia, Alabama (1971); Leighton, Alabama (1952); Killen, Alabama (1971)

13. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Colbert County, Alabama, Scale 1:24,000, February 1978

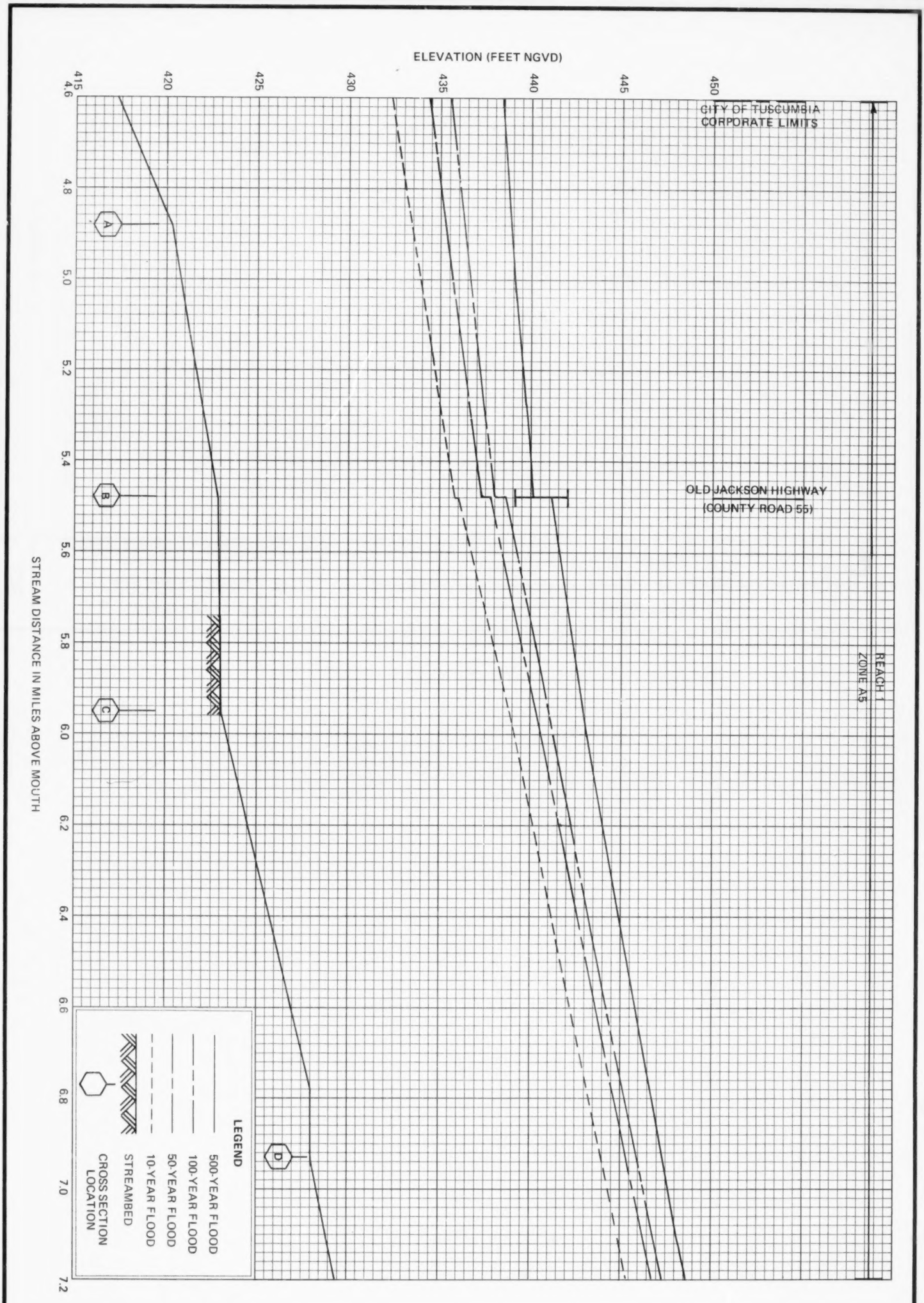
14. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, City of Sheffield, Alabama, December 1977

15. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, City of Florence, Alabama, May 1977

16. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, City of Cherokee, Alabama, September 1979

17. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, Town of Littleville, Alabama, November 1978

18. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, City of Tuscumbia, Alabama, December 1977



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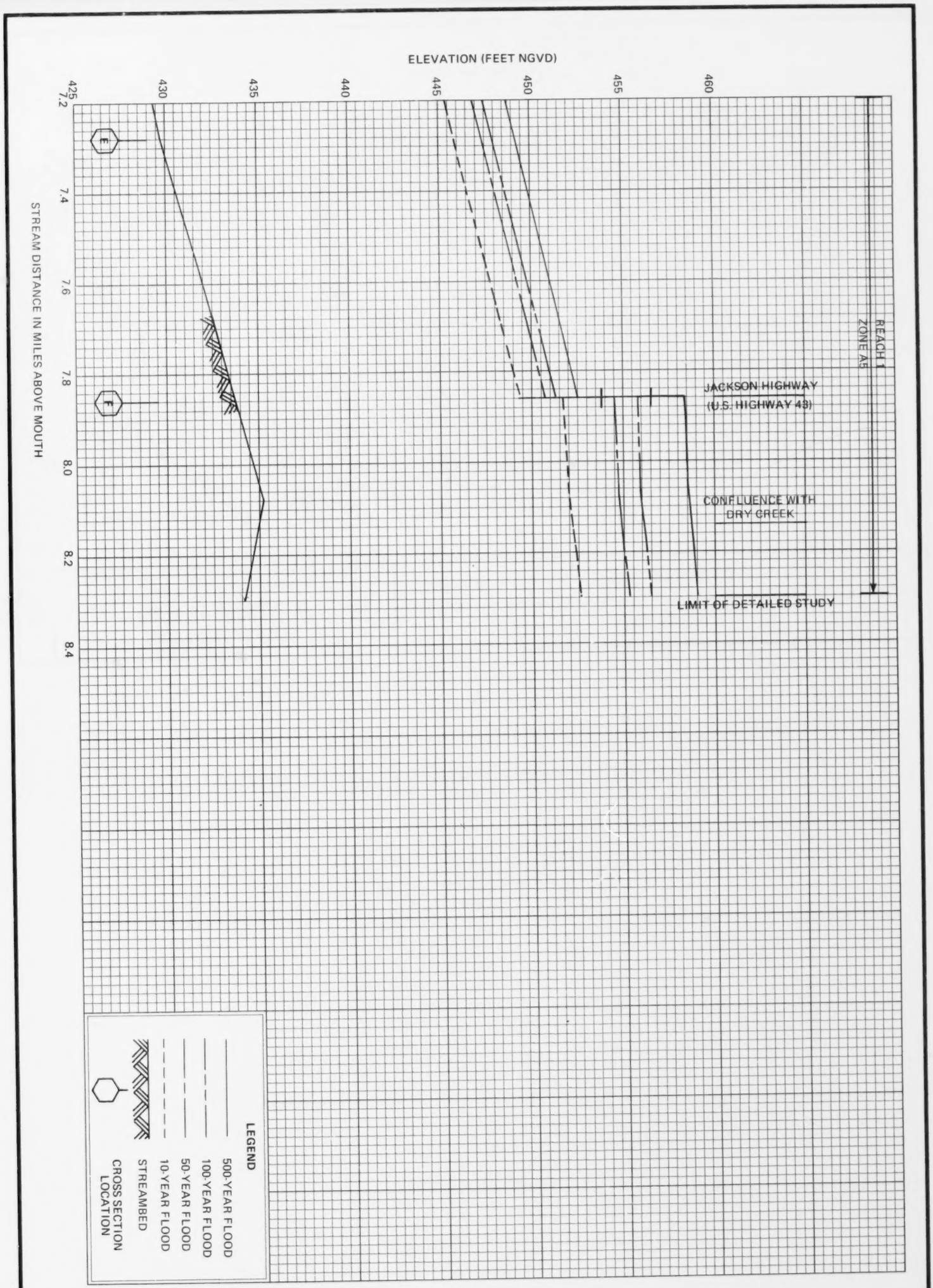
FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

COLBERT COUNTY, AL
(UNINCORPORATED AREAS)

FLOOD PROFILES

SPRING CREEK



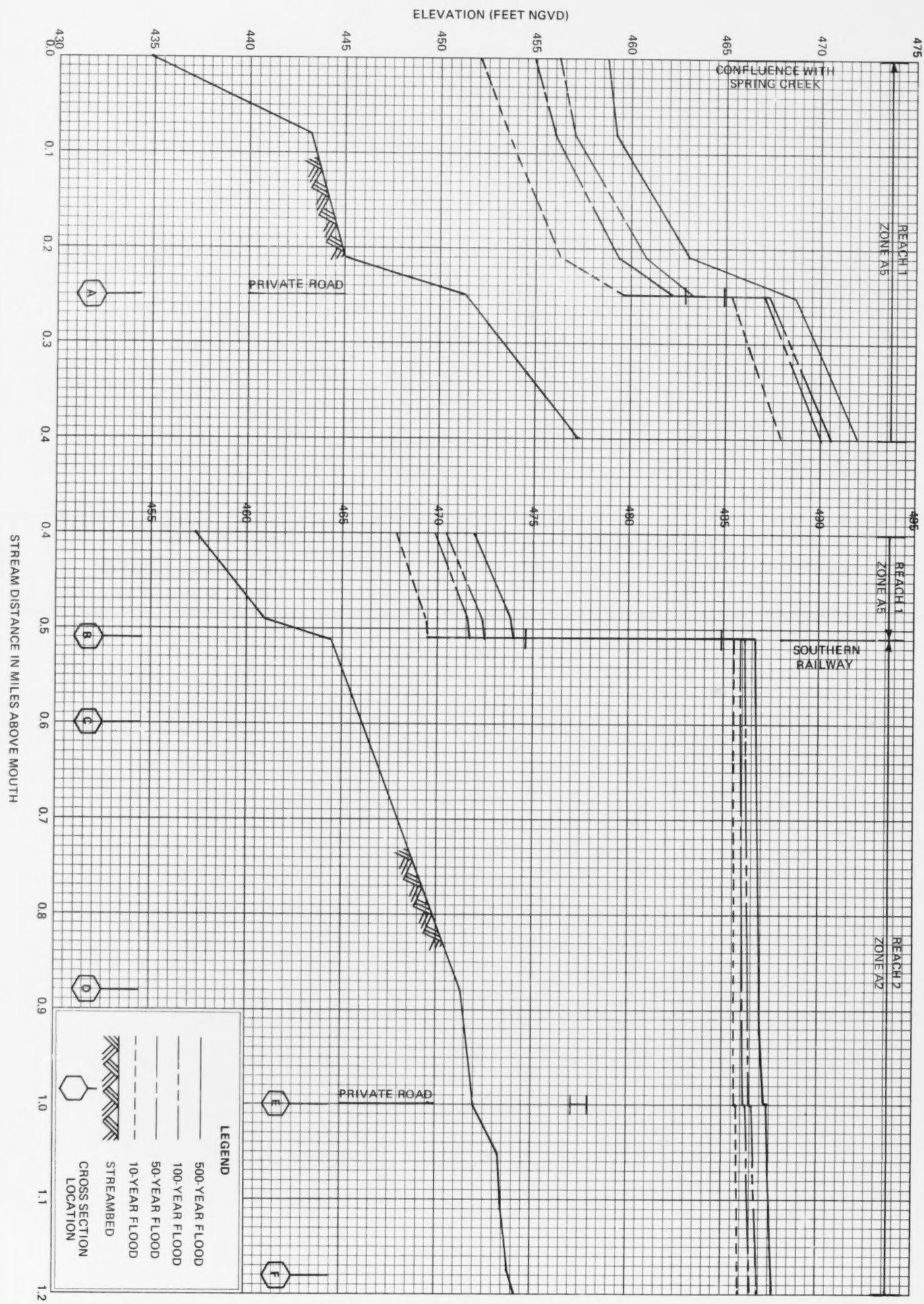
02P

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

COLBERT COUNTY, AL
(UNINCORPORATED AREAS)

FLOOD PROFILES

SPRING CREEK



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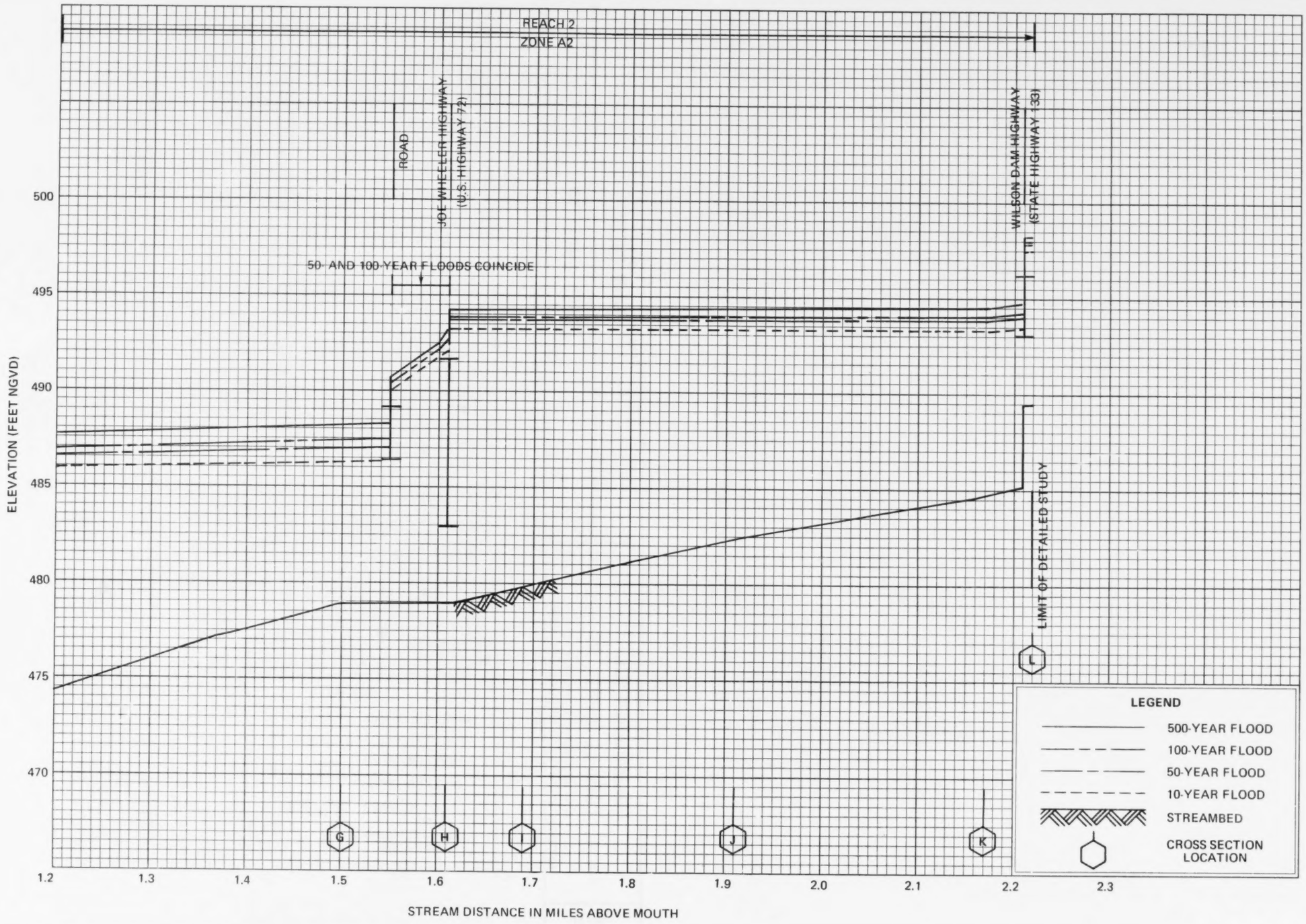


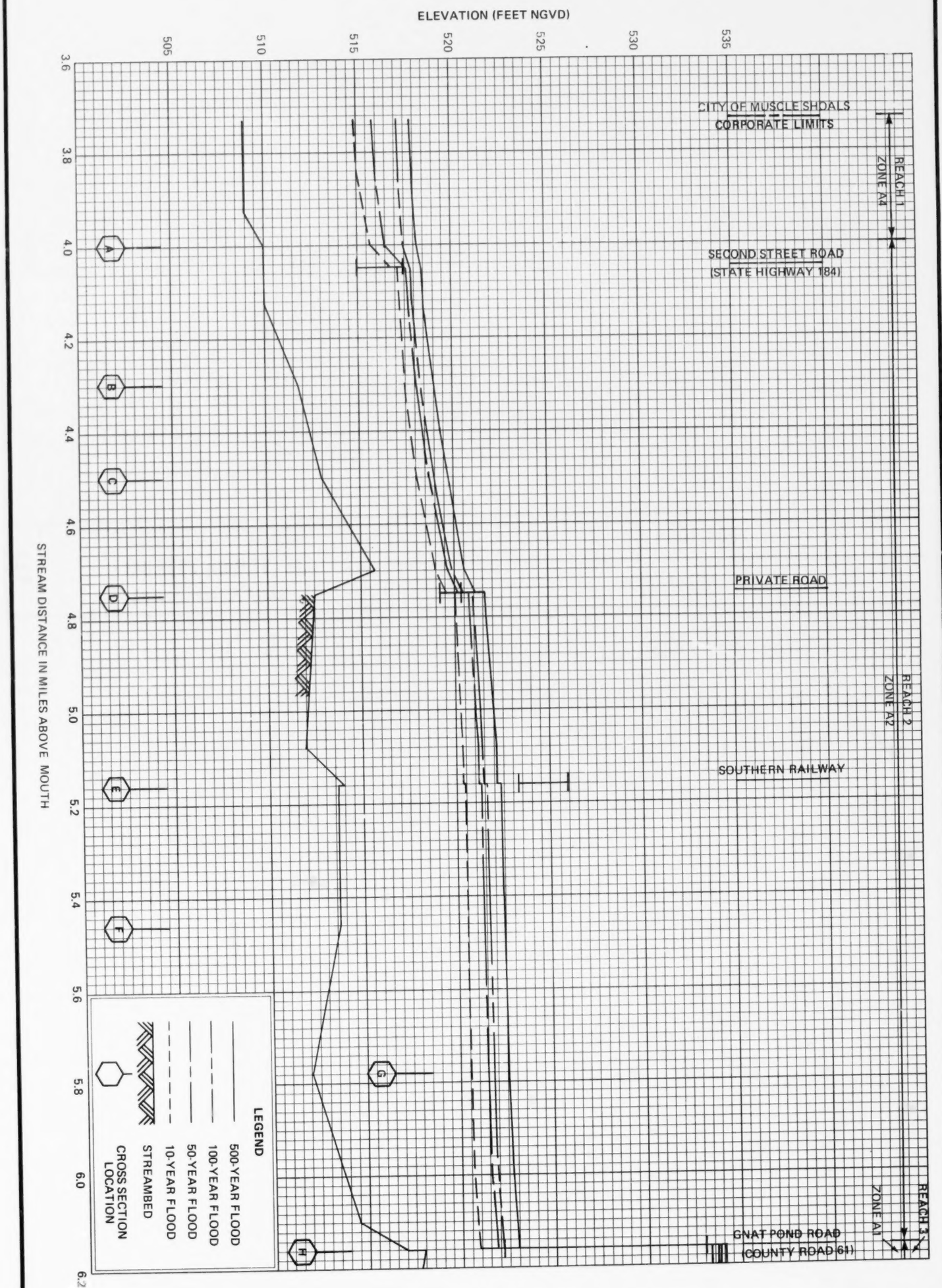
FLOOD PROFILES

DRY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

COLBERT COUNTY, AL
(UNINCORPORATED AREAS)

04P



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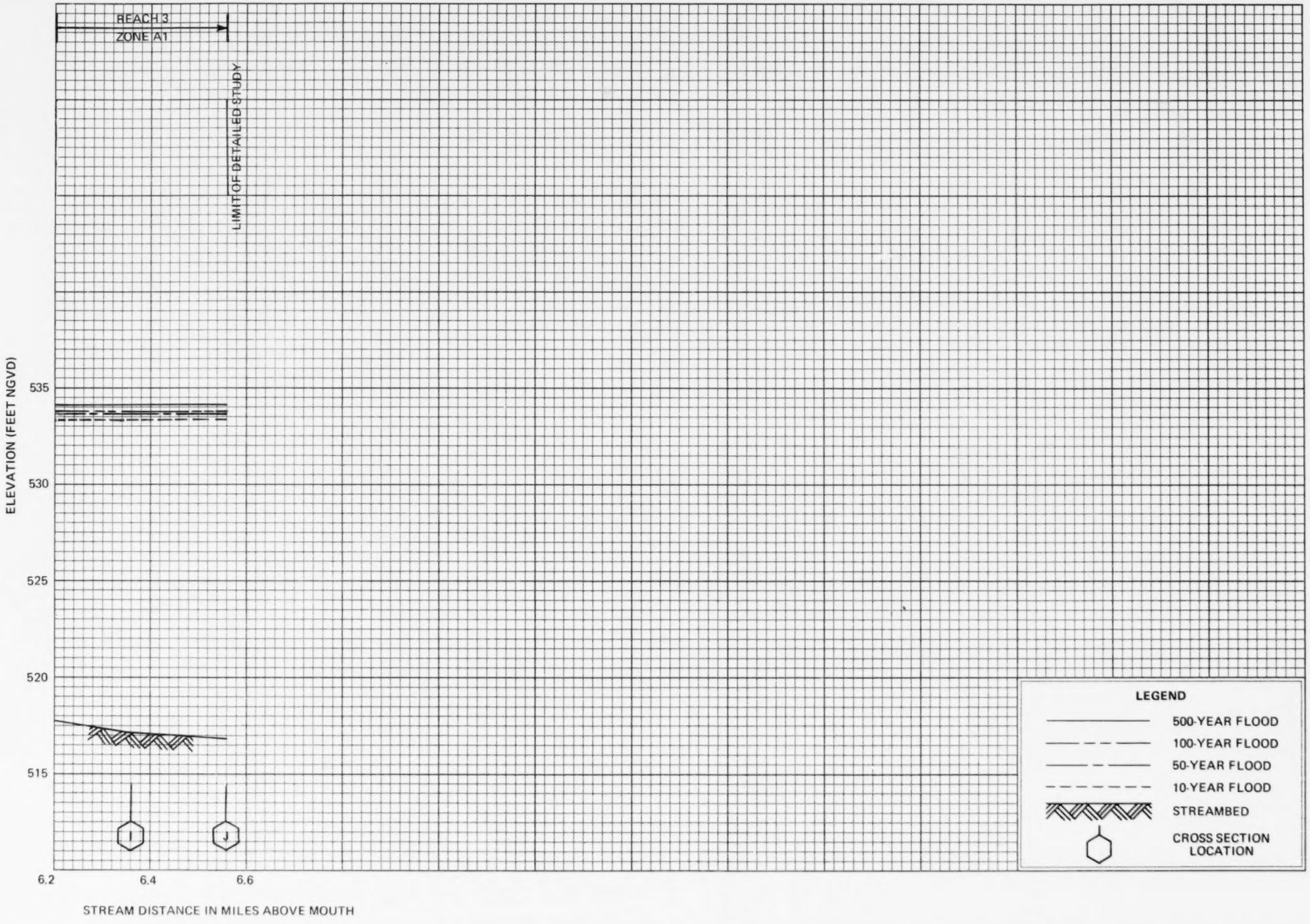
FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

COLBERT COUNTY, AL
(UNINCORPORATED AREAS)

FLOOD PROFILES

POND CREEK



FLOOD PROFILES

POND CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

COLBERT COUNTY, AL
(UNINCORPORATED AREAS)

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